PRODUCT DESCRIPTION DOCUMENT

Experimental Cold Advisory for Newborn Livestock Graphic

APPROVED: //SIGNED// Date: Date: January 7, 2009

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Experimental Cold Advisory for Newborn Livestock Graphic

Part I – Mission Connection

a. Product Description – This graphic will take the current NDFD forecast grids for temperature and wind (wind chill), humidity, and QPF and create a graphic that shows the potential for weather related impacts to newborn livestock.

b. Product Type - Experimental with a goal of becoming operational after one to two seasons.

c. Purpose – The purpose of this experimental product is to provide users with information regarding expected hazardous weather conditions that may impact newborn livestock across northeast Montana.

d. Audience - The intended audience is for the general public in northeast Montana, including those with livestock interests.

e. Presentation Format – The output will be a graphic derived from the NDFD gridded database that is available via the WFO Glasgow website. The information will also be included in a PNS statement for broadcast over the NOAA Weather Radio by forecast zone, and for the local media.

f. Feedback Method – We are always seeking feedback on NWS products and services to facilitate future improvements. We will solicit feedback through the WFO webmaster account, and directly to the WCM in informal discussions with residents. In addition, a web survey can be used to obtain customer and partner feedback. The survey is available at the following link:

http://www.weather.gov/survey/web-survey.php?code=GGW-CANL

The feedback period will be from 1/15/09 to 05/31/09.

g. Example URL = http://www.wrh.noaa.gov/ggw/canl/canl.html

Part II – Technical Description

Format and Science Basis – This information was completed through the COMET Partnership Program under grant #S08-68874. The research that went into this CANL System was developed with a partnership with NWS Glasgow and the University of Miami and Dr. Larry Kalkstein, and Dr. Katrina Frank. Nationally, approximately 95,000 calves die each year due to cold stress (Azzam et al. 1993) resulting in an estimated $38 million loss to producers (Dietz et al. 2003). Conservatively, this costs Montana cow/calf producers about $1.7 million annually (USDA-NASS 2002). For example, in one spring cold outbreak, a rancher in Big Sandy, Montana, lost 250 calves

equating to a loss of approximately $110,000. In discussions with ranchers by the NWS Glasgow office there was considerable interest from local ranchers in the possibility of a National Weather Service (NWS) product specific to the effect of cold weather on newborn livestock. One rancher stated "calves are our saleable product, so no calves, no sales, no income." During the critical weeks of calving, generally mid-January to mid-April in northeastern Montana, ranchers heavily depend upon advanced warning of extreme cold in order to move livestock to more sheltered areas and minimize mortality rates of newborn calves, specifically those less than 24-hours old because these calves are least able to regulate their body temperature (Sanko et al. 1991). Improvement in the advanced warning of potentially hazardous conditions will enable producers to more effectively implement life-saving measures to minimize losses.

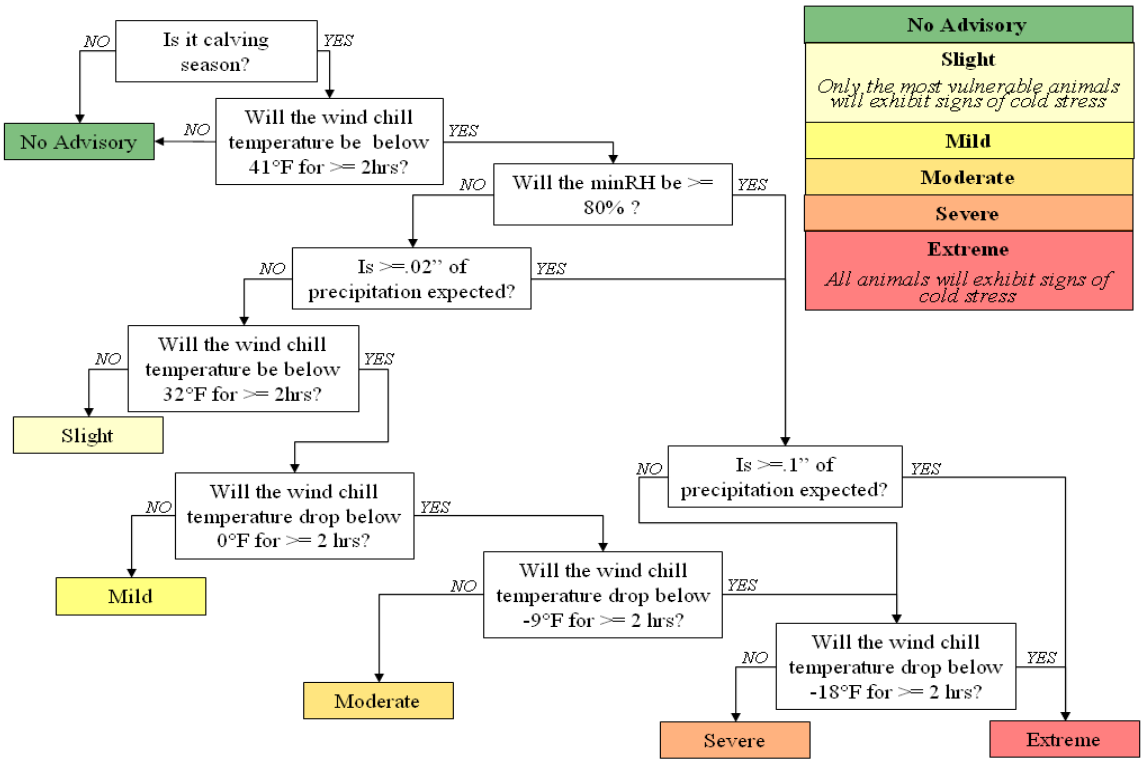
Given that the primary mission of the National Weather Service is to:

. . . provide weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy,

development of advisories that help livestock producers to take actions to mitigate losses of livestock due to cold stress furthers the fulfillment of the mission of the NWS. This proposal for the development and implementation of a cold warning system for calves follows the study of the feasibility of development of such a system, UCAR Award Number: S07-62730, which found that such a system can be developed based on currently available forecast information.

As the study evolved, it was shown this CANL system would work for all newborn livestock, and was expanded from calves to include all newborn livestock.

Below is the decision tree that was developed based on our research, and input from the users to create the CANL system:



Availability – The graphics and the PNS will be updated at least twice a day (4 am and 3 pm) with the forecast package during the time from January 15 through May 31, with updates also created as the forecasters publish the grids. The graphics will be available in 6 hour increments out to 36 hours.

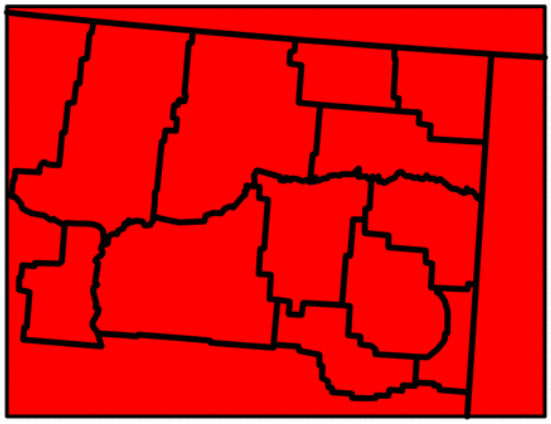
Additional Information – Below is an example experimental graphic from the web graphics:

Cold Advisory for Newborn Livestock

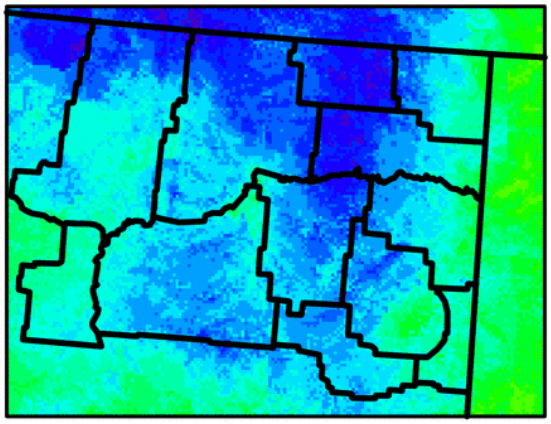
For Saturday Morning, DEC. 20 2008

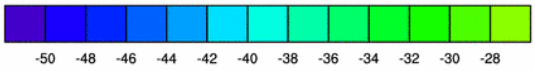
Plot Generated Fri 19 Dec 2008 12:38:09 PM MST

CANL Index for NE MT Counties

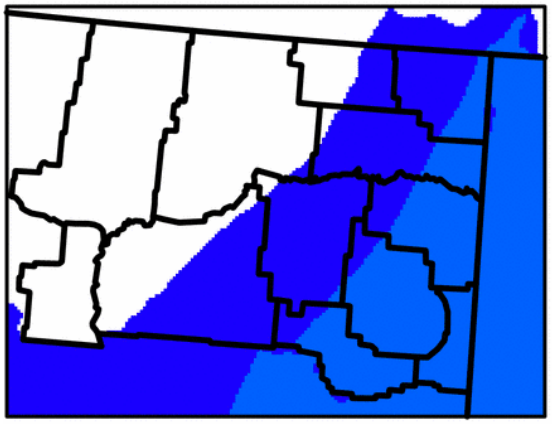


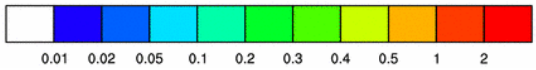
Wind Chill Values, Degrees F





Forecast Liquid Equiv. Precip., inches





Forecast Min. RH, %